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EXTERNAL URETHROTOMY

A PLEA FOR ITS EARLY PERFORMANCE IN MINOR TRAUMATISMS OF THE URETHRA

BY

L. BOLTON BANGS, M.D.

SURGEON TO ST. LUKE'S AND CHARITY HOSPITALS, NEW YORK

Reprinted from THE MEDICAL RECORD, *May 7*, 1887

NEW YORK
TROW'S PRINTING AND BOOKBINDING CO.
201-213 EAST TWELFTH STREET
1887

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THE object of this paper is simply to state certain propositions in regard to an operation with which you are all more or less familiar, and to invite your discussion of them. By "external urethrotomy" I mean the division of the tissues of the male perineum down to and into the urethra, for the prophylaxis and relief of stricture and its consequences, whether the stricture be acute or chronic, traumatic or otherwise. It may be qualified, according to the necessities of the case, by adding the words "with" or "without a guide;" but it is unnecessary to make the distinctions which some writers have made. Illustrations of this could be multiplied; but, for instance, Sir Henry Thompson in "Holmes' System of Surgery" separates it into "perineal section" and "external division." He limits the term "perineal section" to the cases which are impassable to any instrument, and the term "external division" to those in which one can be passed—an arbitrary distinction, because the tissues to be divided and the steps of the operation are essentially the same—the only difference being that in one the operator has no guide through the diseased urethra and in the other he has. Perhaps Gouley's definition is the most precise, viz., "external perineal urethrotomy," but it is unwieldy, and, moreover,

[1] Read before the New York County Medical Society, April 26, 1887.

the term which is employed in this paper is the one commonly used, and conveys to the surgical mind all the significance that is needed.

My first proposition is that the operation should be resorted to earlier than it is usually. The observation of cases which have come under my care in hospital service has led me to the reflection that their condition has been made infinitely worse by the want of timely operation. This is especially true in regard to traumatic cases. The "golden moment" is often immediately, or within a few hours, after the injury has been received, and before inflammatory processes have *fixed* the deviated urethra in a semi-cartilaginous mass which subsequent operation can never thoroughly divide. We all know the difficulty of radically curing so-called traumatic strictures. My belief is that the number of this obdurate kind would be lessened if the rule of performing early external urethrotomy were adopted in all cases which show even minor grades of injury to the urethra—for example, such as result from blows or kicks upon the perineum; or from falling astride wagon-wheels; or from falling upon stumps or sticks which penetrate the perineum and wound the urethra. If in these the presence of a tumefaction of the perineum, associated with dysuria, leads to the opinion that the urethra has received a contusion only, the operation should be done as a prophylactic, because contusion of the urethra has been known to be followed by formidable stricture at the locality. But when a few drops of blood escape from the meatus, with or *without* retention of the urine, and with or *without* obstacle to catheterism (or when it is evident that violence has been done to the urethra), the operation should be done without much delay. In the time allotted to me it will not be possible to elaborate the pathology of this part of the question, but some reasons for these statements should be given. The urethra is now damaged to a greater or less extent, probably torn at one or more points in its circumference, and the tissues surrounding it participate in the injury. The process of repair is soon to be

instituted. This should go on smoothly and quietly, in order to be harmonious and conservative; but bear in mind that it is being periodically interrupted or interfered with by the necessity which exists for the urethra to perform its function. Urine is being constantly secreted. The bladder must expel its contents, and sometimes, under the reflex agencies of the spinal cord, it does this with great violence. Even if extravasation of urine does not occur the process of repair is irritated into an inflammatory one, and cicatricial deposits, ultimately to contract, take place in and around the urethra. The same thing results in cases which necessitate and are susceptible of catheterism. The passage of the instrument is more or less irritating, and adds to the pathological status. And here it may be remarked that even these cases are not free from the danger of extravasation. I have known it to take place insidiously, little by little, into the periurethral tissues, in cases which were not supposed to require operative interference because the bladder could be emptied by the catheter.

Again, consider for a moment the pathology of another class of cases, in which the damage to the perineum and urethra has been greater. Here retention of urine has occurred. Failing in catheterism the practitioner in charge has made use of various remedial measures—opium, poultices; or, perhaps, aspiration has been resorted to, and after a while the patient feels better. His bladder ceases to trouble him, and he is at rest. In a few hours he experiences pain in the perineum, and red spots appear upon the skin, which, proving to be abscesses, are opened, and pus and urine escape. Subsequently a certain amount of restoration of the urethra takes place and some urine passes in the natural way; but finally we have a man presenting for treatment who has an indurated and strictured urethra, with urinary fistulæ communicating with the urethra at, and posterior to, the seat of original injury. What have been the steps in this case, which is one taken from actual experience? Manifestly urine has escaped from the urethra, possibly before the

aspiration (or in spite of the latter, for the bladder often contracts spasmodically upon even a small amount of urine), and the patient has experienced the relief of having emptied his bladder. But this relief is temporary, for he has "voided his urine into his own tissues," which, sooner or later, have resented its presence, and inflammation with suppuration has resulted. Perhaps it may be said that healthy urine escaping into the cellular tissues does not account for the chain of pathological processes as I have stated them. Please observe that the tissues into which the urine has escaped are *already damaged*, and nature is about to *repair* them. The least additional irritation, such as the presence of even healthy urine, is sufficient to excite undue activity, and *inflammation*, rather than repair, is the result. Whatever may be the explanation of the formation of perineal abscesses in cases whose urine is presumably normal, the fact remains that we have them to deal with, and the treatment which I am advocating will, I am sure, obviate their development. In order, then, to place the urethra, with its associated muscular and nerve structures, in the best possible condition to heal without inflammation, *rest* must be obtained for them ; and further, all possible liability to extravasation of urine, with its formidable sequelæ, must be prevented. Now it seems to me that *early* external urethrotomy, before inflammation or extravasation has supervened, will meet these indications. A free linear incision through the perineum to the urethra, the latter opened, posterior to the point of injury if possible, and thoroughly distended with the forefinger, is an operation simple in execution (if performed early enough) but comprehensive in results. And what does it accomplish? It prevents the forcing of urine into the lacerated or lame urethra, and thence into the cellular planes. It enables the urine to drain away in drops, with scarcely any movement on the part of the muscles of the urethra or perineum, and without any effort by the patient. Functional activity being no longer required, physiological rest ensues. The nerve-relations of the patient are

but slightly disturbed and *repair* of the injured tissues takes the place of inflammatory action.

It is obvious, then, that to obtain these ends the operation should be done at as early a moment as practicable after the receipt of the injury. I therefore submit, as a part (or corollary) of my first proposition, that the practitioner who is first called to such a case should be the one to do it. Of course, much depends upon his manual facility, and if he is at all doubtful, he should send at once for the one in his neighborhood whom he believes to possess the requisite knowledge and dexterity, without losing time in efforts at catheterism or in the giving of narcotics. A glamour of difficulty seems to have been thrown about the operation, and perhaps such an impression is conveyed by the text-books, but it should be borne in mind that for the most part these deal with cases which have become formidable because the pathological changes (which we are seeking to prevent) have already taken place. Permit me to assert that any medical man, with a fair amount of confidence and with a catheter and scalpel in his pocket-case, is competent to do the operation. The catheter may be gently passed (under ether) and the urethra opened upon it. If it be arrested, cease all further manipulations and open the urethra upon its point. The proximal end of the injured urethra, if not readily found, may be located by compressing the bladder over the pubes and causing a spirt of urine into the wound. The tissues, although they may be swollen and discolored by extravasated blood, are yet yielding, elastic, and separable, and the torn or displaced canal may be recognized by this manœuvre. A probe or the point of the catheter can then be inserted, a linear incision made, and the operation completed. If strictures are present in the penile urethra these may be treated at the same time, provided the patient's condition will allow. There is another class of cases to which the operation is applicable under this proposition. It is one in which are found perineal abscess and a urethra abnormal only from the presence of strictures of large cal-

ibre. Dr. Otis has called attention to this in his paper upon "Follicular Departure from the Urethra." In these cases it is not sufficient to evacuate the abscess and rely upon catheterism or dilatation. The urethra should be divided at the time that the abscess is opened, lest the cause of the latter persist and more deplorable results follow. In this connection permit me to cite a case which illustrates the fact that extravasation of urine may take place in spite of the fact that the urethra is open to the passage of a fair-sized instrument. I saw the patient in consultation with Dr. Craemer, of Brooklyn, by whose courtesy I am permitted to report it. J. L——, single, aged twenty-seven, was seen for the first time by Dr. Craemer on the evening of November 7th. He was found to be suffering from complete retention of urine, which had lasted for several hours. He was a reticent, uncomplaining person, and only an indefinite statement that he "had had stricture for some years" could be elicited. A No. 10 (English) soft catheter was easily introduced, and about half a pint of fetid, turbid urine withdrawn.

The next morning the catheter was again used, and twelve ounces of clearer urine drawn. The catheter was left *in situ.* The following morning it was found that, in spite of the constant drainage from the bladder, extravasation of urine had evidently taken place into the perineum and scrotum. Operation was advised and was refused by the patient. The effects of extravasation becoming more and more manifest, I was summoned, and saw the patient with Dr. Craemer a few hours later. He was then in poor condition, with a pulse of 120. Urine was escaping from the soft catheter still in the bladder. The scrotum was enormously swollen, livid in color, and on the left side of the median line was already a black mass of necrosed skin and cellular tissue, covering an oblong area two or three inches in diameter. The perineum was also deeply discolored, boggy, and so intensely swollen as to distort the raphé and bring it almost in contact with the left thigh. Plainly extravasation had

been going on for some time. I counselled immediate operation, and, assent now being given, "external urethrotomy" was accordingly skilfully done by Dr. Craemer.

Now how can retention and extravasation of urine be accounted for in such a case as this? It might be said that the strictured urethra was suddenly plugged by mucus or muco-pus from the bladder, and that the urethra then gave way under the straining efforts of the patient. Such an explanation might be plausible or hold good in regard to a urethra which had been narrowed to filiform size; surely not in relation to one into which could be passed an instrument which *formerly* represented Sir Henry Thompson's gauge that the urethra was *not* strictured, viz., a No. 10 (English). In this case the catheter was not "bitten," not even held by the urethra, and at the time of the operation a No. 23 French grooved staff was easily and gently slid into the bladder. My own theory, based upon the study of other cases, is this: The *extravasation* was the cause of the *retention*. Thus, Otis' "Follicular Departure from the Urethra" had been quietly and insidiously taking place; that is to say, a minute quantity of urine had probably entered an ulcerated or inflamed follicle at or behind a stricture. Inflammation, with *swelling*, followed. This still further impeded the outflow of urine, and more of the latter aggravated the difficulty in the submucous tissues. The processes being reciprocal, sufficient swelling to compress the urethra finally occurred, and the more the patient strained the worse he made himself. Observe that this patient was not able to evacuate his bladder even after the catheter had been passed, and that the doctor was compelled to leave it in. My explanation of this is that the catheter could be made to traverse the urethra and "round the corners," so to speak, of the compressing obstacle, whereas the efforts of the patient simply drove his urine into the softened and infiltrated tissues. The foregoing theory was derived from observing two cases in my service at Charity Hospital. In each of these was a perineal abscess. *Be-*

fore the latter was evacuated only filiform bougies could be introduced, but after relieving the swollen and distended perineum a fair-sized staff passed readily. I therefore inferred that the swelling itself had increased the obstructing effect of the strictures.

The second proposition which I have to offer is, that the operation of external urethrotomy is in *itself devoid of danger to the patient.* Not absolutely, for this cannot be affirmed of any operation upon the living subject, but I believe that its dangers as well as its difficulties have been overstated. The danger is in the condition of the patient antecedent to the operation; or in the conditions which necessitate its performance. It is the disease of the kidneys usually present in cases of chronic stricture which predisposes to the dangers of exhausting hemorrhage and suppression of urine. I have caused search to be made in the records of autopsies of several of the large general hospitals of New York City, and have found that where death has followed the operation of external urethrotomy the patient was the subject of some debilitating, devitalizing disease, and usually of disease of the kidneys. For example, take the record of St. Luke's Hospital. Out of 140 cases of external urethrotomy for different causes there were 8 deaths; of these 4 died from the effects of diseased kidneys; 1 from chronic pyæmia, caused by abscesses in the scrotum (for which the operation was done); 1, aged sixty-one, from chronic cystitis and prostatitis; 1 from pulmonary phthisis; and 1, who had secondary syphilis, from peritonitis.

The treatment of stricture is better understood than formerly, and it is in the experience of hospital surgeons that fewer cases of extravasation of urine are now met with. And I believe, also, that in the next decade we will see fewer with perineal fistulæ and the aggravated forms of cystitis and suppurating kidneys which render the conditions of these patients so dangerous, for they will have received the benefits of treatment before serious pathological changes have taken place.

127 East Thirty-fourth Street.